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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/576,006	04/17/2006	Yong-Min Lee	CU-4773 RJS	8807

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CHICAGO, IL 60604

EXAMINER
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PATEL, MUNJALKUMAR C

ART UNIT	PAPER NUMBER
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2617

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/576,006	<b>Applicant(s)</b> LEE ET AL.	
	<b>Examiner</b> Munjal Patel	<b>Art Unit</b> 2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 24 November 2008.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
  2. Ascertaining the differences between the prior art and the claims at issue.
  3. Resolving the level of ordinary skill in the pertinent art.
  4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
1. Claims 1-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Karabinis** (US PAT # 5,937,332) herein after referred as **Karabinis**.

**Regarding claim 1, Karabinis** discloses an apparatus for repeating a signal from a

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satellite to a mobile station in a shadow area (**Karabinis: Abstract & Fig 2-7, Column 1 lines [17-32] ,[46-60], column 4 lines [61-67]**), the apparatus comprising:

a receiving unit for receiving the signal and amplifying the received signal from the satellite (**Karabinis: Fig 2: 210 & Fig 3: 250 discloses receiving unit with amplifier that amplifies signal received from satellite Fig 2:110**);

a radiating unit (**Karabinis: Column 5 lines [11]**) for radiating the amplified signal to the shadow area (**Karabinis: Column 4 lines [65]**);

and a feeding unit for feeding the amplified signal to the radiating means (**Karabinis: Fig 2 & column 5 lines [6-21] describes the process where repeater receives signal, amplifies it and retransmits to the mobile station which provides means for feeding the amplified signal to the radiating means**),

wherein the receiving unit transmits the amplified received signal to the radiating unit without being blocked (**Karabinis: Fig 5A where the receiving antenna is outside the building and radiating antenna is inside the building and transmission between those is functional as column 5 lines [22-29]**).

wherein the shadow area is blocked from receiving the signal from the receiving unit (**Karabinis: Fig 5: 220 & column 2 lines [60-65]**). However Karabinis fails to specifically mention receiving unit transmits the amplified received signal to the radiating unit without being blocked. however, the examiner maintains that it was well known in the art to provide receiving unit transmits the amplified received signal to the radiating unit without being blocked as taught by Karabinis (**Column 3 lines [19-25] discloses downlink antenna are placed separate than**

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**uplink antenna which indicates presence of a physical link between two which is not blocked).**

**Therefore**, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Karabinis by specifically providing receiving unit transmits the amplified received signal to the radiating unit without being blocked for the purpose of increasing repeater gain (**Karabinis: column 3 lines [28-30]**).

2. **Regarding claim 2, Karabinis** discloses the apparatus of claim 1, wherein the receiving unit comprises:

a micro-strip patch array antenna (**Karabinis: Fig 2: 210 is patch array antenna i.e. micro strip patch array antenna**) for receiving the signal from the satellite; and

an amplifier for amplifying the received signal (**Karabinis: Fig 3:250 & 280**) from the micro-strip patch array antenna (**Karabinis: Fig 2: 210**). This claim is rejected for the same motivation as claim 1.

3. **Regarding claim 3, Karabinis** discloses the apparatus of claim 2, wherein the radiating unit is installed in the shadow area (**Karabinis: Column 4 lines [65]**). This claim is rejected for the same motivation as claim 2.

4. **Regarding claim 4, Karabinis** discloses the apparatus of claim 2, wherein the micro-strip patch array antenna (**Karabinis: Fig 2: 210**) and the amplifier (**Karabinis: Fig 3:250 & 280**) are implemented as one piece (**Karabinis: Fig 2 & 3**) and further comprises a probe

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**(Karabinis: Fig 3: connecting probe is between 170 to 250 & 280)** for transiting the signal received from the micro-strip patch array antenna to the amplifier. This claim is rejected for the same motivation as claim 2.

5. **Regarding claim 5, Karabinis** discloses the apparatus of claim 1, wherein the radiating unit is one directional **(Karabinis: column 5 lines [55-57] describes downlink signal received from one or more satellites, hence one directional antenna or multi directional antenna is used)** micro-strip patch array antenna **(Karabinis: Fig 2: 210)**. This claim is rejected for the same motivation as claim 1.

6. **Regarding claim 7, Karabinis** discloses the apparatus of claim 1, wherein the receiving unit is located at a position where a line of sight to the satellite **(Karabinis: Fig 2:110 & 210 are in line of sight)** is secured. This claim is rejected for the same motivation as claim 1.

7. **Regarding claim 8, Karabinis** discloses the apparatus of claim 1, wherein the radiating unit comprises:

a dual directional antenna provided with a first micro-strip patch array antenna **(Karabinis: Fig 2: 210 & column 5 lines [55-57] describes downlink signal received from one or more satellites, hence dual directional antenna)** and a second micro-strip patch array antenna **(Karabinis: Fig 3:290 column 6 lines [3-5])**; and

a divider for dividing the signal **(Karabinis: Fig 3:270)** received from the receiving unit to a first portion and a second portion **(Karabinis: Column 5 lines [64-67])**, and passing the first

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portion to the first micro-strip patch array antenna and the second portion to the second micro-strip patch array antenna (**Karabinis: Column 6 lines 1-10 describes transmitting the signal to multiple radio telephones 120 using multi directional antenna**). This claim is rejected for the same motivation as claim 1.

8. **Regarding claim 6 & 9, Karabinis** discloses everything in claim 5 as above, however **Karabinis** fails to disclose apparatus's intended use specifically as shadow area being overpass or underpass. However, examiner maintains that it was well known in the art at the time of invention to interpret shadow area as underpass or overpass.

9. **Karabinis** describes shadow area as signals into buildings, foliage, transportation vehicles, and other objects which can reduce link margin (**Karabinis: column 2 lines [6—65]**), it is obvious to one ordinary in the art to interpret it as underpass or overpass as in both situation it reduces link margin of the apparatus disclosed. This claim is rejected for the same motivation as claim 5.

### ***Response to Arguments***

10. Applicant's arguments with respect to claims 1-9 are have been considered but are moot in view of the new ground(s) of rejection.

a. Applicant argues about features that were not part of claims presented earlier.

Prior art rejections have been updated to show the amended features of the claim.

### ***Conclusion***

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this

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Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Munjal Patel whose telephone number is (571)270-5541. The examiner can normally be reached on Monday - Friday 9:00 AM - 6:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rafael Perez-Gutierrez can be reached on 571-272-7915. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would



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like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Munjal Patel  
Examiner  
Art Unit 2617

/MP/

/Rafael Pérez-Gutiérrez/  
Supervisory Patent Examiner, Art Unit 2617